Society Reports.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting of May 5th, 1891.

The President, Dr. L. C. **GRAY**, in the chair.

THE BACK IN "RAILWAY SPINE."

Dr. F. X. **DERCUM**, of Philadelphia, read a paper with the above title.

The speaker considered that the physical condition of the back had been insufficiently discussed.

"At the outset of our inquiry, we are met with the problem as to what extent pain, a subjective symptom, should be admitted as a factor. We all know that pain of various kinds is met with in railway cases. Now it has seemed to me that we should exclude from this discussion all pains, the existence of which cannot be confirmed by any physical evidence, and which rest solely upon the unsupported statements of the patient. Under this head come the vague aches, "weak feelings" and paræsthesias, which may be absolutely genuine, but, for the demonstration of which there are no known means.

On the other hand, all pain, signs of which are evoked without previous warning or suggestion, should be rigidly admitted. Under this head come all pains, signs of which are evoked during palpation, pressure, percussion and motion, either voluntary or passive.

To begin, it is impossible to separate sharply the symptoms elicited by palpation from those elicited by pressure. Curiously enough too, the very first symptom that presents itself for our consideration, namely abnormal sensitiveness of the surface, or hyperæsthesia, constitutes a borderland symptom between the subjective groups, the exact significance and value of which it is impossible to fix, and for the present at least this symptom must be set aside.

Very different however are the symptoms so frequently elicited by pressure. Here the patient distinctly reacts in a manner that unmistakably indicates pain. At the outset, however, we must distinguish between two groups of symptoms radically different in their meaning and which are elicited according to whether the pressure is superficial or deep. In the first group we have the well known tender spots of so-called spinal anæmia, or spinal irritation, and which are now recognized as being related to purely functional conditions. As is well known they are elicited by comparatively slight pressure, and most frequently over the dorsal and cervical spine, and further, in the vast majority of cases the area of tenderness is small and distinctly limited. Whatever speculation we may indulge in as to their nature, whether we regard them as expressive of some nutritive or functional change, in deeper structures or relegate them to the great group of the inflexicables of hysteria, there can be no doubt that these painful areas are genuine. If, without telling the patient just what is being done or what drug is being used, an injection of cocaine be made into a painful spot, the latter, in the fraction of a minute or longer, disappears. At the same time, the painful spots above and below not so treated remain unchanged. Surely upon this and other grounds the inference is justified that we have an actual, a bona fide condition, to deal with.

Without pausing to assign this symptom, its proper place in the syndrome of railway spine, let us pass at once to the consideration of the symptoms elicited by *deep* pressure. In a large number of cases pain is not complained of unless the pressure made is decided. Care should of course be exercised in examining with deep pressure not to cause pain in the superficial structures, especially the skin. This can readily be avoided by pressing with the thumb, but with its palmar surface. One would of course not think of using a pointed instrument or the knuckles in making the test.

The pain elicited on deep pressure, differs, I need hardly point out, altogether from that elicited by superficial pressure. In the first place it differs in character. It lacks the acute sensitiveness of the painful spot. The patient reacts later and less suddenly. It utterly fails to resemble hyperæsthesia which the painful spot in some of its features approaches. Secondly, it is more diffused and instead of being found directly over the spine it is more apt to be found, and for some little distance, on one or both sides. Lastly, it very frequently bears in its position a distinct relation to the history of the accident. This I can best illustrate by citing one or two cases. First: A healthy young woman of twenty-four, while standing in a railway station was struck by the pole of a loaded baggage truck. The truck was being pushed very rapidly, and the end of the pole struck her directly between the spinal column and the right shoulder blade. Two years and three months later, when first examined by me, I still discovered a very painful area upon deep pressure in this region, though I did not until afterwards learn that it corresponded to the site of the injury. Superficial painful spots were not present in this case, nor was the patient in the least degree hysterical. Another instance is the following: Second: A finely developed man of twenty-seven, a brakeman, was caught between bumpers while coupling freight cars. His back and left side were badly squeezed, though no bones were broken. Upwards of two years later he presented marked pain upon deep pressure in the lower lumbar and upper sacral region, especially toward the left, and in addition deep tenderness over and above the left iliac region. Neither hyperæsthesia nor painful spots were present. Both of these patients I should say had suffered from shock and still presented some asthenic symptoms.

Without pausing to multiply instances of this symptom, or to discuss its meaning, let us pass to the pain elicited by percussion. It is at once evident that pain elicited by percussion is without significance unless both superficial and deep pain upon pressure have been previously taken into account or excluded. Percussion is, of course, best performed with a rubber hammer, such as the Madison Taylor hammer used in studying the knee-jerk. The patient lying prone, extended and relaxed, a number of very rapid and not very hard blows should be made directly over the spine with the point of the hammer, the idea being to elicit pain not by the force of the blows but by the faint though decided jarring produced.

Aside from the fact that this method will frequently elicit pain in the bony structures when other methods either cannot be well applied or result negatively, it is not improbable that even pain having its origin in the spinal canal itself may be brought to light by this means. Two instances in my experience favor this view. One was a man in my care at the Philadelphia Hospital who fell from a wall some ten feet high, striking upon the lower portion of the back, and who subsequently developed a concussion myelitis. In his case, pain—absent in this region to other tests, was elicited in the lower dorsal and upper lumbar region by the hammer used in the manner described. The other case was the patient exhibited at the last meeting of the American Neurological Association, held in Philadelphia, who had been cured of paraplegia by the resection of a number of spines and laminæ. In this man pain in percussion was one of the most definite and valuable symptoms present, and in the course of the operation marked inflammation of the dura with adhesions to the subjacent pia were revealed, while the fragments of bone removed appeared healthy. These cases are very suggestive, and it certainly is not improbable that this method of percussion—that is, the jarring produced by slight though very rapid blows—may be of decided value in cases otherwise obscure.

Having briefly touched upon the examination of patients by palpation, pressure and percussion, let us now turn our attention to the important tests by motion.

In regard to pain elicited by voluntary motion, the objection may properly be urged that here an opportnnity is presented to the malingerer. However, there are, as will be pointed out, so many other means of ascertaining the truth at our disposal that difficulty in arriving at definite conclusions will rarely be experienced. In the first place, if there be pain on movement, there is an instinctive tendency to prevent all movement. The back is held very stiffly, and very frequently indeed the patient adopts peculiar and striking attitudes. Further, if the patient complain of pain on voluntary movement, passive movement of the trunk in directions and at times not expected by the patient, will generally act as a safe corrective to statements made by him. In addition certain physical conditions of the muscles are apt to be present, namely, the muscles of and in the painful area and its immediate neighborhood are apt to be in a condition of spasm either continual or coming on at such times when movement, either voluntary or passive, is attempted. This feature, when present, is most valuable, as it cannot be simulated and as it does away absolutely with the suspicion of malingering. Finally, the muscles which are in a state of spasm are painful when touched and are also in a condition of heightened reflex irritability.

Much depends upon the manner in which the various tests for motion be applied and it may not be out of place to consider them in detail. There are flexion forward, lateral flexion, torsion, and transmitted shock.

Having first practiced palpation and pressure and gleaned such information as can be obtained from these sources, we should closely observe the back as the patient stands before us, providing of course that he be not paraplegic. He is now directed to bend forward. The points to which our attention should be directed are, the manner in which the act is performed, the amount of motion in the back itself,the stage in the act at which the patient complains of pain, if any, and the area to which the pain is referred, and finally, the occurrence of muscular spasm. If rigidity be a marked feature the patient will often merely throw the back forwards as one piece, motion taking place only at the hip joints. If urged to make more decided effort, the patient will frequently bend the knees,stoop, adopt in fact any expedient that will save the back. In cases less marked the patient will upon urging begin bending the back, but very soon will check the movement protesting that it gives him pain. Very frequently also decided spasm makes it appearance in the muscles at this time. The spasm when present is usually most marked, unless otherwise determined by some detail of the accident, in the lower dorsal and lumbar regions. In cases still less marked than the above, forward flexion may be almost completed before pain is complained of, or what is very important, motion may only be restricted in one part of the back. Thus a patient may hold the neck and shoulders very rigidly but flex the lumbar spine quite well, or there may be little or no movement in the lumbar region while the upper part of the spine is flexed considerably.

Supposing now that this test has not yielded decided results or that the patient in his unwillingness to bend the back has opened himself to suspicion, forcible flexion may justifiably be resorted to. Of course the adoption of this procedure depends absolutely on the good sense and judgment of the investigator. We should remember that the pain exited by forcible flexion is often extreme.

We next practice lateral flexion. Here the same points are of course to be observed as in forward flexion. It occasionally happens that in cases where forward flexion has failed to elicit symptoms, the latter are brought to light when the trunk is bent to one or the other side. This generally corresponds to some peculiarity of the accident. For instance in the case of the brakemen already mentioned who was squeezed between the bumpers of cars, my notes read as follows: "No pain upon forward flexion. Marked pain upon flexion to the right. Pain referred to left side and extending from ilium to lower ribs." It should be remembered that it was the left side especially which had been injured.

Should forward and lateral flexion have failed to elicit symptoms or should the latter have been doubtful, torsion may be practiced. An assistant kneeling before the patient should firmly grasp the hips while the operator seizing the shoulders should gently,but firmly,rotate the trunk. If there be deep-seated soreness, the patient will soon give signs of suffering. This method of reaching for pain is a powerful one and is rarely of itself required as most pains are readily elicited by the flexion test. It may be however that in a given case the muscles of the back have suffered less than the fibrous tissues and smaller joints of the spine itself, and in such instance this test may be a very valuable one. While flexion both forward and lateral reacts upon the spine it reacts more perfectly upon the muscles. Torsion on the other hand reacts more powerfully upon the spine itself.

We now come to the test by transmitted shocks. This may be practiced in various ways. The patient standing as erect as possible the operator places both hands with fingers interlocked on the head and then by a sudden downward pull sends an impulse through the spine. The amount of force exerted must be gauged by the reaction of the patient. The spine may be so very sore that the reaction to even a slight impulse is excessive,and needless suffering may be caused. A gentle pull should first be made, and if no response is elicited from the patient a more, forcible one may be given.

If it be desired to eliminate the cervical portion of the spine from the problem, the patient may be seated and the impulse be transmitted through the shoulders. On the whole, however, this method will be found less satisfactory than the preceding.

A third method is to direct the patient while standing to raise himself upon the toes and then to let himself fall back easily upon the heels. This method is also less valuable than the first. A man with a very sore back can absolutely not be made to execute this test properly. At most it should be used as a confirmation of pain elicited by other means.

We have thus far considered, though briefly, the various tests for eliciting pain. Not only is it possible with due care to settle the question of the genuineness of the symptoms by any one of the methods detailed, but it is also evident that there must be a general correspondence in the results of all the methods. We should expect for instance that the area of pain upon deep pressure should correspond, other things equal,to the area of pain or motion,or that the region of pain elicited by percussion should correspond to the region of pain elicited by transmitted shock. Admitting then for the present the reality of the symptoms and without pausing to discuss their probable lesions, let us turn our attention to a few typical instances of the railway back."

The Speaker then related the history of six cases, and presented the photographs illustrating the various altered positions, and accompanying spastic condition of the muscles of the back.

Stated Meeting of June 3, 1891.

The President, Dr. L. C. GRAY, in the chair.

THE CEREBRAL ATROPHIES OF CHILDHOOD, WITH SPECIAL REFERENCE TO SURGICAL TREATMENT.

Dr. M. A. STARR read a paper with this title. He said that the propriety of surgical interference in cases of cerebral disease was one of immediate and increasing interest, and therefore one which should be frequently discussed by those who were in a position to reach decided opinions. There were so many forms of cerebral disease in which the possibility of operations might be admitted, that a general discussion of the subject did not produce definite results; therefore he would devote this paper to a particular class of cases, viz., the cerebral diseases of infancy and childhood.

The immediate result of certain cerebral diseases in infancy was to produce certain definite symptoms, giving rise to three types of clinical cases: First, cases of hemiplegia, with or without athetosis; secondly, cases of mental defects of various grades; thirdly, cases of sensory defects of various kinds. And since epileptiform seizures, of the *petit mal* or *grand mal* type, were frequently met with in any of these forms, and might perhaps be the particular symptom in regard to which advice was sought, it was evident that the discussion must include the surgical treatment of non-traumatic organic epilepsy in children. The symptoms of the first class were the sudden development of a unilateral paralysis, after a series of convulsions attended by high fever, other febrile symptoms and a period of unconsciousness of varying duration; then a gradual improvement in the paralysis after all active symptoms of the onset had subsided; finally, a stationary condition, in which the face was hardly affected in its voluntary or automatic movements; the speech was usually regained, if it had been lost;

the arm was quite seriously paralyzed, the fingers being stiff and awkward, and sometimes being in constant slow, involuntary motion; the leg was held rather rigid, so that the child limped in walking and sometimes had a club foot.

In all cases the paralyzed limbs were found to be affected in their growth and development, so that they were smaller, colder, stiffer and weaker than the others; the reflexes were exaggerated, but the electrical reactions were not quantitatively changed, and sensation was normal. This condition remained through life as a permanent defect. In over one-half of these cases, epileptic attacks were of frequent occurrence.

The cases which dated from birth must be divided into those in which there had been evidence of traumatism during labor and those in which there was nothing about the delivery sufficiently unnatural to awaken suspicion of trauma. In the former class it might be stated that cerebral hemorrhage, usually meningeal, was the cause of the symptoms. In the latter class it was probable that an intra-uterine encephalitis or some unknown cause had prevented the fœtal brain from developing.

The degree of spontaneous recovery in any case could be pretty well determined by an examination at the end of the second year; but it was evident from data on the question that a complete cure never occurred. The fits in organic epilepsy were more likely to be frequent and severe than in idiopathic epilepsy. These attacks did not destroy life, but of course rendered life a burden, and almost any means for their relief was countenanced. The second class of cases presented mental defects, rather than physical symptoms—defects which could not be educated out of the patients, in which no amount of training could produce an appreciation of the fitness of things. The third class presented no motor or mental deficiencies. Those affected were capable of training, but had defects of sensory perception which indicated gross cerebral disease. Many cases of deaf-mutism belonged to this class; also cases of hemianopsia.

In regard to this latter condition, the author gave the history of the case of a little girl, aged twelve years, who had suffered all her life from frequent attacks of *petit mal* and occasional attacks of *grand mal*. She had never been able to see objects approaching her from the left side. It was learned from the mother that the child had been delivered with much difficulty, that the labor had been prolonged, that the head was greatly misshapen and had a large caput succedaneum over the posterior part. When the child's head was inspected, it was found that there was a perceptible flattening of the skull over the right occipital region. The eyes, when examined, showed a contraction in the visual fields. It seemed reasonable to suppose that this patient had a defective development of the right occipital lobe of the brain, and that this involved the cortex and also the subcortical tract. Wilbran had shown that a purely cortical lesion produced symmetrical defects in the visual field, while subcortical lesions produced asymmetrical defects. The pupils, in the cases reported, responded to light thrown upon the blind field of the retina; hence the lesion was not in the optic tract. There had never been any hemianæsthesia or hemiplegia; consequently the lesion was not in the thalamus or near the internal capsule. The patient had been brought for treatment for epilepsy, and it was an important question to decide in regard to the possible benefit of surgical interference.

The author thought that any solution of the problem of operative treatment must be based upon two considerations: First, the pathology of the cases; and secondly, upon the results of experience when such operations had been done. From the records of the pathological conditions found, two facts were elicited: First, the different clinical types were due to the different situation of the lesion, rather than to its varying nature; secondly, that the various processes of disease had, as a fairly uniform result, a condition of atrophy with sclerosis of the brain. In the clinical cases of the first type, the sclerotic atrophy involved the motor area of the brain, the central convolutions and their immediate vicinity, including the tract arising from them, and usually the basal ganglia as well. In the clinical cases of the second type, the sclerotic atrophy involved the anterior portion of the brain, and sometimes the entire hemisphere to a greater or less extent. In the third type, the sclerotic atrophy involved the posterior and lateral parts of the hemispheres. The hypothesis was that the origin of the disease lay in some interference with the blood supply of the part, since it had often been evident that the atrophy was limited to the region nourished by blood reaching it through one arterial trunk. This hypothesis was weak, from the fact that at autopsies it was very rare to find vascular lesions in the brains of infants. Consequently the pathogenesis of these defects was as yet quite obscure.

From the records of operations done upon six cases of the first clinical type, it was evident that this method of dealing with the disease offered no relief. In regard to the second type, the author thought that the pathology contraindicated an operation. To the third type, those of sensory defects, there were no facts of a surgical kind to present; but judging from the pathological resemblance between them and the first two classes, there was no reason to expect any different result from surgical treatment. It was concluded that (1) in infancy and childhood mental defects, hemiplegia and sensory defects, of a year's duration, were usually due to an incurable atrophy of the brain substance; that (2) in such cases surgical treatment could not afford any relief, for there was no probability of an increase of intracranial pressure to be relieved, and the pathological state was one which could not be treated; that (3) the sudden onset of such symptoms in childhood, while awakening a suspicion of cerebral hemorrhage, did not invariably indicate it, and could not be made the basis for an operation unless many other facts made the diagnosis quite clear; that (4) the occurrence of epilepsy in such cases might be made the basis of an operation, for while the epileptic attacks were of organic origin and would persist, their frequency might be much diminished. In such cases the opening in the skull should not be filled by bone.

It had seemed possible to the author that the existence of a movable connective-tissue valve of scalp covering the opening in the skull, and varying in its tension, might have something to do with the cessation of the fits. In watching such a valve, he had noticed great variation in its tension, and the idea of it as a safety-valve had been forced upon him.

Finally, he would urge upon neurologists the necessity of very great caution in recommending surgical interference in the class of cases which belonged to cerebral atrophies.

Dr. B. SACHS said that, on the whole, he was in agreement with the author of the paper, but that some of his views might be open to criticism. He thought that, as a general proposition, little could be gained in the treatment of the class of cases referred to by surgical operations, but that there was a decided field for the surgeon if the case was taken in hand early. He thought there was much more hope for these cases if they could be operated upon at the time of the initial lesion, before degenerative changes had taken place. He considered it worse than useless to operate in a case of sclerosis or porencephalus. He thought Dr. Starr was mistaken in saying that in every case there must be widespread secondary degeneration. Secondary degeneration did follow many diseases of the brain, but not in all cases, he was satisfied.

The speaker was convinced that much good was done in the puncture of old hemorrhagic cysts; he had seen the epileptic attacks very much diminished by this procedure. In the radical treatment of cerebral atrophies, unless the entire diseased area was removed, no good could come of the operation. In regard to the safety-valve question, nothing could be gained by such an operation unless the dura was opened; even then, if epileptic attacks were to be cured, the centre from which they emanated would have to be excised. This latter operation might leave the patient with a paralysis, but with a cure of the epilepsy; which of the two was the greater evil would have to be determined by those most interested.

Where there was not thought to exist a sclerotic condition, and where it was supposed the initial lesion could be attacked, operation might be done; but it must be borne in mind that children did not bear surgical operations upon the brain as well as adults. The speaker did not see how Dr. Starr could make the statement that the growth of the skull and the brain was necessarily synchronous, when their growth was independent each of the other; however, when the skull ceased to be yielding, the brain was certainly at a disadvantage.

Dr. H. D. CHAPIN said that too early closure of the fontanelles was supposed by some to prevent evolution of the brain; but it was a question as to whether the closure was due to the microcephalus or to the reverse proposition. As to operation in these cases for the purpose of giving the brain more room, the speaker thought it just as well to let them alone, considering that it was not known whether the early closure had anything to do with the condition or not.

Dr. E. D. FISHER was in favor of operation in the class of cases referred to by the author of the paper. As soon as the first symptoms, such as convulsions and so on, appeared, even if this were during the first week of life, he would recommend operation, and at any time, if the case was seen before degenerative changes had taken place; even then he was not sure but that operation might do some good toward alterating cell-growth and promoting improvement. Of course, if a case was diagnosed as that of porencephalus, operation should not be done. The speaker reported about thirty cases of hemiplegia in which the measurements of the brain showed a very appreciable diminution on the diseased side. He thought that this was conclusive evidence of the condition, and that by operation something might be done to excite nutrition and growth.

Dr. W. R. Birdsall was glad to endorse Dr. Starr's conservative views in regard to operative procedures on this class of cases. Dr. Sachs had referred to irritation of the cortical lesion, which might set up beneficial changes. The speaker thought that this could just as well bring about a worse condition of affairs. As to many of the so-called atrophies, he thought that arrest of cerebral growth might take place without it being a true atrophy; that the cells retained their original condition without degenerative changes taking place. He thought that many of the clinical cases of retarded development were of this type, instead of that of sclerotic atrophy. As to operating on such cases, he would like to know what operators expected to find, and when they had found something, what they would do with it, and what good they could expect from such procedures any way. He thought that Dr. Starr's idea of a safety-valve, for the purpose of giving the brain more room, was far-fetched, inasmuch as the original trouble, whatever it was, caused an arrest of both brain and cranial growth. He might operate in cases of disturbance of the circulation, where the indications were clear and where the point of disease was likely to be found; but there was a great difference between operating in such cases and splitting open a microcephalic skull for the purpose of letting the brain grow.

The President had seen many operations upon infantile atrophies, and had yet to see any good come of it, and, furthermore, he could not see how benefit could be expected from surgical interference in such cases. How could operation do any good at the time of an inflammatory attack of the brain, and how could it be of service when secondary changes had taken place? If the sclerotic area were cut out, would there not be left behind a similar condition of cicatrix and contraction? He thought that for record of cure, in cases of operation for cerebral epilepsy, to be of value, the reports had hitherto been made too soon, for the history of some cases without treatment showed spontaneous recovery and the attacks had not returned for years. He was satisfied that Dr. Starr was laboring under a misapprehension in thinking that premature ossification of the fontanelles induced brain pressure, although cases of epilepsy had been reported as due to this cause. He thought that more was expected in the surgery of cerebral atrophies than would ever be realized.

Dr. STARR said it was all very well to talk of operating early in these cases, as one of the speakers had proposed, but who was to make such an absolute diagnosis and to decide when and when not to carry out such serious procedures?

Asylum Notes.

COMMITMENT OF THE INSANE.

By MARGARET A. CLEAVES, M.D.

The matter of the commitment of the insane is one of vital importance, and it is, therefore, with regret that we learn that a new law has been proposed in Pennsylvania, by Judge Brewster, providing for a jury of twelve laymen, who should judge as to the sanity of a person before his committal to an asylum.

In a paper read before the Section of Neurology and Medical Jurisprudence of the American Medical Association by Dr. N. Roe Bradner, of Philadelphia, the following objections were made to this proposed law, which in our judgment are pertinent: First, that laymen were not capable of acting as judges in these cases; that there was loss of time in the treatment of acute mania, which should be promptly treated, and that it was a great injustice to the families of these afflicted persons to give such publicity to their unfortunate condition. To this we would add that the injustice often done to the patient by the publicity of this method of commitment is greater still. A similar law, as is well known, has been in operation in Illinois for some years, while more recently such a one has been enacted in England.

The law in Illinois is found extremely objectionable in practice, and Dr. Sanger Brown, of Chicago, recently testified that the horror felt by insane persons and their relatives at the general character of the legal proceedings under the present law has led to the establishment of private institutions just outside the State, of which many avail themselves.

In England the new Lunacy Act is found to render the administrative machinery more cumbrous than ever. Much